IN THE CLAIMS:

Please cancel claims 6 and 27 without estoppel or disclaimer of the subject matter, and amend claims 1, 3-5, 7, 8, 11-14, 17-20, and 22-26 as set forth below.

1. (Currently amended) An interface system ~~coupling a fixed impedance node to a wide-band receiver for transmission of data signals of different data rates~~ between a fixed impedance node and a wide-band receiver for converting data signals of different data rates to converted data signals adapted for the wide-band receiver, the interface system comprising:

a first set of elements ~~coupled to the low impedance node and the wide-band receiver for transmitting data signals~~ connected between the fixed impedance node and the wide-band receiver for converting first data signals at a first data rate during a first time period to first converted data signals adapted for the wide-band receiver, the first set of elements providing a first time constant response to the first data signals; and

a second set of elements ~~coupled to the low impedance network and the wide-band receiver for transmitting data signals~~ connected between the fixed impedance node and the wide-band receiver for converting second data signals at a second data rate during a second time period to second converted data signals adapted for the wide-band receiver, the second set of elements providing a second time constant response to the second data signals.

2. (Original) The interface system of claim 1 wherein the first set of elements and the second set of elements have one or more elements in common.

3. (Currently amended) The interface system of claim 2 wherein the one or more elements in common decouple a DC voltage associated with the first and second data signals.

4. (Currently amended) The interface system of claim 2 wherein the first set of elements comprises a first capacitor ~~connected to the low impedance node~~ connected between the fixed impedance node and the wide-band receiver ~~and a first resistor connected to the first capacitor, the wide-band receiver, and to an AC ground~~ , and a first resistor between the first capacitor and an AC ground; and wherein the second set of elements comprises the first capacitor, a second capacitor connected to the AC ground, and a second resistor ~~connected to the first capacitor and in series to~~ connected between the first capacitor and the second capacitor.

5. (Currently amended) The interface system of claim 2 wherein the first set of elements comprises a first capacitor ~~connected to the low impedance node and the wide-band receiver,~~ connected between the fixed impedance node and the wide-band receiver, a first resistor connected to the first capacitor and ~~the wide-band receiver~~ an AC ground, and a second resistor ~~connected to~~ connected between the first resistor and ~~to an~~ the AC ground, and wherein the second set of elements comprises the first capacitor, the first resistor and a second capacitor ~~connected to~~ connected between the AC ground and ~~to~~ the first resistor in parallel with the second resistor.

6. (Canceled).

7. (Currently amended) The interface system of claim 1 wherein the first and second data signals are differential signals and the interface system has a differential circuit topology.

8. (Currently amended) An AC coupling interface system coupling a low impedance transmission line to an amplifier for the non-simultaneous transmission of digital data signals at different data rates between a fixed impedance transmission line and an amplifier for converting non-simultaneous digital data signals of different data rates to converted data signals adapted for the amplifier, the AC coupling interface system comprising:

a first capacitive element ~~coupled to the low impedance~~ connected to the fixed impedance transmission line for receiving the digital data signals;

a first resistive element ~~coupled~~ connected to the first capacitive element and to a reference voltage source, ~~wherein~~ the first resistive element ~~and~~ in conjunction with the first capacitive element ~~are configured to provide~~ providing a first time constant ~~responsive to a first digital data signal~~ response to first digital data signals at a first data rate; and

a second resistive element ~~coupled~~ connected between the first capacitive element and a second capacitive element, the second capacitive element ~~coupled~~ connected to the reference voltage source, ~~and wherein~~ the second resistive element ~~and~~ in conjunction with the second capacitive element ~~are configured to provide~~ providing a second time constant ~~responsive to a second digital data signal at a second data rate;~~ response to second digital data signals at a second data rate.

9. (Original) The AC coupling interface system of claim 8 wherein the first capacitive element has a larger capacitance than the second capacitive element and the first resistive element has a larger resistance than the second resistive element.

10. (Original) The AC coupling interface of claim 9 wherein the first data rate is in the Kilobit per second range and the second data rate is in the Megabit per second to Gigabit per second range.

11. (Currently amended) The AC coupling interface of claim 8 wherein the ~~low-impedance~~ fixed impedance transmission line is one of the group consisting of a 50-ohm coaxial cable, a 75-ohm coaxial cable, a stripline, a microstripline, and a PCB controlled impedance trace.

12. (Currently amended) The AC coupling interface system of claim 11 wherein the second resistive element provides impedance matching for ~~the one of the group consisting of a 50-ohm coaxial cable, a 75-ohm coaxial cable, a 100-ohm twisted pair cable, a stripline, a microstripline, and a PCB controlled impedance trace~~ the fixed impedance transmission line.

13. (Currently amended) A differential AC coupling network ~~connected to a first node, a second node and a differential amplifier, the differential AC coupling network for the transmission of~~ between nodes providing differential digital signals and a differential amplifier for converting the differential digital data signals ~~at a low data rate and at a high data rate~~ of different data rates to converted data signals adapted for the differential amplifier, comprising:

~~a reference voltage source for providing a DC bias voltage to the differential amplifier and an AC ground for the differential AC coupling network;~~

a first input capacitor connected between ~~the~~ a first node and a first input of the differential amplifier, the first input capacitor providing DC voltage isolation for signals from the first node;

a second input capacitor connected between ~~the~~ a second node and a second input of the differential amplifier, the ~~first and~~ second input capacitors ~~for~~ providing DC voltage isolation for signals from the second node;

a first load resistor connected between the first input capacitor and ~~the~~ a reference voltage source, the first load resistor in combination with the first input capacitor providing a first time constant response to first differential digital data signals at a first data rate during a first time period;

a second load resistor connected between the second input capacitor and the reference voltage source, ~~wherein the first and second load resistors~~ the second load resistor in combination with the ~~first and second input capacitors are configured to provide a first RC time constant responsive to the differential digital data signal at the low data rate during a first time period~~ the second input capacitor providing the first time constant response to the first differential digital data signals at the first rate during the first time period;

a first series combination of a first matching resistor and a first ~~low-value~~ matching capacitor connected between the first input capacitor and the reference voltage source, the first series combination providing a second time constant response to

second differential digital data signals at a second rate during a second time period; and

a second series combination of a second matching resistor and a second ~~low-value~~ matching capacitor connected between the second input capacitor and the reference voltage source, ~~wherein the first and second series combinations are configured to provide a second RC time constant responsive to the digital data signal at the high data rate during a second time period~~ the second series combination providing the second time constant response to the second differential signals at the second rate during the second time period.

14. (Currently amended) The differential AC coupling network of claim 13 wherein the first and second nodes are ~~low impedance~~ fixed impedance transmission lines.

15. (Original) The differential AC coupling network of claim 13 wherein the differential amplifier is an input stage of a wide-band receiver.

16. (Original) The differential AC coupling network of claim 13 wherein the first and second matching resistors have a lower resistance value than the first and second load resistors.

17. (Currently amended) The differential AC coupling network of ~~claim 16~~ claim 13 wherein ~~the lower resistance value is one of about 50 ohms, about 75 ohms, about 100 ohms or about 500 ohms~~ the first matching resistors have resistance of approximately 50 ohms.

18. (Currently amended) An interface system ~~coupling a low impedance node to a wide-band receiver for transmission of digital data signals at different data rates~~ between a fixed impedance node and a wide-band receiver for converting data signals of different data rates to converted data signals adapted for the wide-band receiver, comprising:

means for ~~providing a short time response to a first digital data signal at a high data rate~~ converting first digital data signals to first converted digital data signals adapted for the wide-band receiver during a first time period, and providing a first time constant response to the first digital data signals; and

means for ~~providing a slow time response to a second digital data signal at a low data rate~~ converting second digital data signals to second converted digital data signals adapted for the wide-band receiver during a second time period, and providing a second time constant response to the second digital data signals.

19. (Currently amended) The interface system of claim 18 wherein the first and second digital data signals are differential signals and the interface system has a differential circuit topology.

20. (Currently amended) The interface system of claim 18 further comprising means for isolating a DC voltage from the ~~low impedance~~ fixed impedance node to the wide-band receiver.

21. (Original) The interface system of claim 20 further comprising means for providing a reference DC bias voltage to the wide-band receiver.

22. (Currently amended) The interface system of claim 18 wherein the ~~high data~~ first data rate is between 500 Megabits per second and 3 Gigabits per second and the ~~low data~~ second data rate is orders of magnitude smaller than the high data rate.

23. (Currently amended) The interface system of claim 22 wherein the ~~high data~~ first data rate is ~~about~~ approximately 2.5 Megabits per second and the ~~low data~~ second data rate is ~~about~~ approximately 9.6 Kilobits per second.

24. (Currently amended) The interface system of claim 18 wherein the means for ~~providing a fast time response~~ converting the first digital data signals further comprises means for matching ~~a low~~ an output impedance of the ~~low impedance~~ fixed impedance node.

25. (Currently amended) A method of ~~coupling a fixed impedance node to a wide-band receiver through an AC coupling network for the transmission of digital data signals of multiple data rates~~ converting digital data signals of different data rates received from a fixed impedance node to converted data signals adapted for a wide-band receiver, the method comprising:

~~providing at a first time a first transfer function associated with~~ generating first converted data signals by an AC coupling network using a first time constant response of the AC coupling network in response to receiving ~~a high data rate digital data signal from the fixed impedance node, the first transfer function for avoiding distortion of the high data rate digital data signal~~ first digital data signals at a first data rate from the fixed impedance node, the first time constant configured to reduce or eliminate distortions in the first converted data signals;

~~providing at a second time a second transfer function associated with~~ generating second converted data signals by the AC coupling network using a second time constant response of the AC coupling network in response to receiving ~~a low data rate digital data signals from the fixed impedance node, the second transfer function for avoiding distortion of the low data rate digital data signal~~ second data signals at a second data rate from the fixed impedance node, the second time constant configured to reduce or eliminate distortions in the second converted data signals~~; and~~

~~decoupling the low impedance node from the wide band receiver to a DC voltage~~.

26. (Currently amended) The method of claim 25 further comprising matching an output impedance of the fixed impedance node with the AC coupling network for a maximum power transfer of the first and second digital data signals.

27. (Canceled).